Cabinet Water Softener

Installation & Operating Guide

Thank you for purchasing this Softener. We are sure that it will provide you with trouble free service for many years to come. Please use the following pages to assist you in the installation and set up of your new Softener.

Identifying your Softener

Your softener will have a identification label fixed to the outer carton and the control valve, this will look similar to the picture shown here.
The information listed can be read as follows:

4202035013	Stock Number:	Manufacturers part number.
SNo	Serial No:	Serial No.
08090137 Mis	Id Code:	Softener type identification code.
0919-255-760	Configuration:	Vessel size, Valve type & Controller type.

Identify the settings relevant to your softener from the chart below by looking at the vessel size and controller type.

General Information

Valve connections.

255 Valve	Inlet ¾”	Outlet ¾”	Drain ½” Barbed, Overflow ½” Barbed
268 Valve	Inlet 1”	Outlet 1”	Drain ¾” Barbed, Overflow ½” Barbed

Power requirement	240V (12V, 50Hz, 3 amp plug in transformer supplied).
Inlet water pressure	Min 20 psi, Max 120psi
Working temperature	Max 40° C, Protect from frost

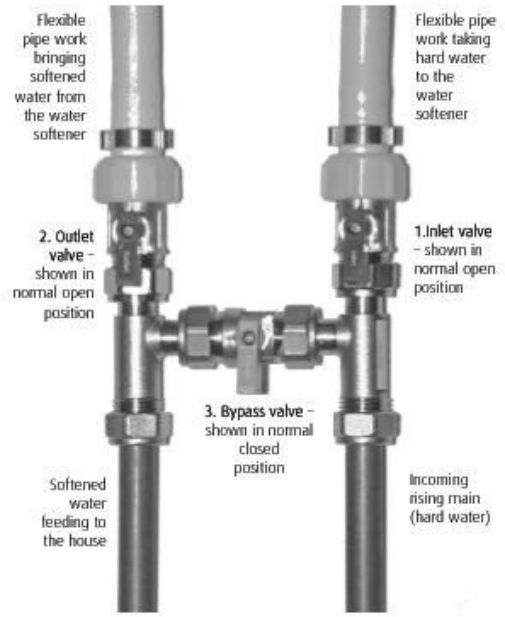
The softener may or may not be supplied with connection hoses, drain hoses or bypass valve sets depending on your supplier; these are available to order separately if required from your supplier.

Planning Your Installation.
Please observe the regulations concerning the installation of your water softener. For guidance check out the water regulations advisory service web site (www.wras.co.uk) Check that you only have one rising main, that you have allowed space for access to the unit for possible future maintenance and salt replenishment. Check the water pressure; locate the rising main (stop cock) a drain facility and a power supply.
Unless you are replacing an existing water softener, this installation will require you to carry out plumbing work and may require an electrical outlet to be fitted near the softener, this should be carried out by a qualified person.

Positioning the Softener.
Where possible the softener should be placed close to the rising main. Take care to allow hard water take off points for a drinking water facility and /or an outside tap. The distance between the drain and the Softener should be as short as possible. Ensure that both the drain and overflow will not freeze or reach a temperature above 40°C. If putting the Softener within a cupboard ensure that the base is adequately supported. If the Softener is being installed within your loft etc it is recommended to house the Softener within a tank capable of storing at least 100 Litres with an overflow fitted. The overflow on the tank should be below the Softener overflow and be a minimum of ¾" in size.

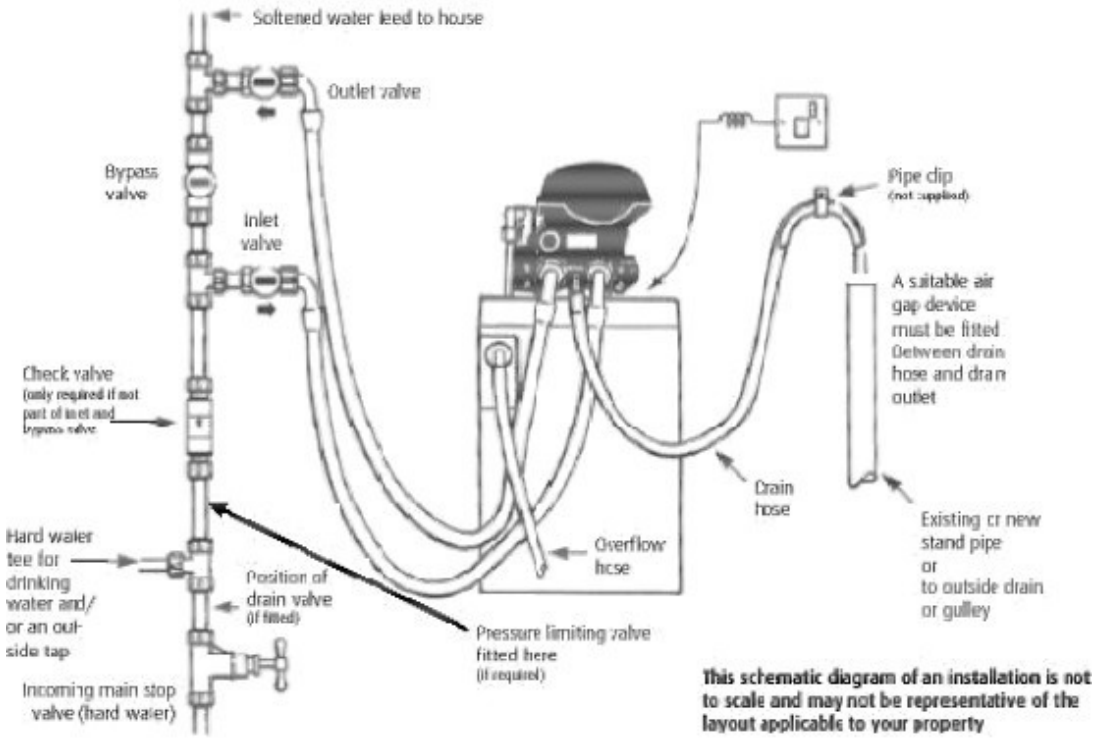
A single Check Valve.
A suitable check valve should be fitted. This will usually be in the installation kit that can be ordered separately.

Check List.
Before you start the installation make sure that you have all the necessary fittings. The purchase of one of our standard installation kits will normally ensure that you have everything that you need for a typical installation



Water Pressure Test.
It is important that a pressure test is carried out. High and low water pressure can result in either damage to or failure of the Softener. Although the Softener is tested to a pressure of 8 bar (120psi), we recommend the fitting of a pressure limiter should your pressure exceed 5 bar (70 psi). The minimum working pressure is 1.4 bar (20 psi)

Before starting the installation of the valves ensure that the stop cock is in the closed position.



Connecting the Softener.

Once you have completed the installation of the valves set the valves as follows:
Softener Inlet and Outlet valve
CLOSED Bypass valve OPEN
You can now safely return the stop cock to the open position. Using the hoses provided (if installation kit ordered) connect the straight end of the hose having first inserted the washer provided to the softener inlet and outlet valves. Connect the angled end to the Softener. The Softener inlets and outlets should be indicated either with the words inlet or outlet or with an embossed directional arrow on the Softener tails. Normally the Softener tails are in a configuration of three with the centre normally being the waste outlet.

Waste Pipe Installation.

Connect the waste pipe to the waste outlet on the Softener and run the hose to either an up stand or outside drain, a minimum air gap of 20mm must exist at the end of the drain line. Softened water will have no adverse effect on a septic tank. Should you need to extend the drain hose this can be done by connecting to a 15mm copper tube for a maximum run of 8 meters with a minimum daytime pressure of 40 psi. Ensure that the drain hose is not kinked or obstructed in any way as this will lead to an overflow of the softener. The drain pipe can run uphill to a maximum of 1 Meter with a minimum water pressure of 40 psi.

Overflow Connection.

The overflow connection is the white ½" hose spigot on the rear or side of the cabinet. A clip is not required for this connection. The overflow must be run downhill through an outside wall without kinks or restrictions. It is recommended the overflow hose be visible when it exits the outside wall.

Electrical Connection.

Connect the transformer provided to a continuous electrical supply with the power off. Plug the flying lead from the transformer into the electrical connection on the controller (see programming instructions). Ensure the flying lead cannot get caught on the camshaft or any moving parts on the Softener valve.

Preparing the Softener to go into service.

Now that all the connections have been completed put approximately 5 litres of water into the brine tank. You may also at this point put a quantity of salt into the tank. Do not allow the salt level in the brine tank to exceed the height of the overflow. The amount of salt used will depend on the type and model of Softener you have, you should never let the brine tank become completely empty of salt and it is advisable to check the salt levels on a regular basis until a usage pattern has been established, normally the salt level should be above the water line.

Putting the Softener into service.

You should now complete any programming instructions that may apply to your particular Softener. During the commissioning process and initial regeneration you can confirm that the unit has no leaks from the installed valves and that waste water runs freely. This regeneration will also assist in cleaning any potential air locks that may be present within the system.
The regeneration will also reset any internal meter or timer devises that dictate the frequency of the regeneration cycle.

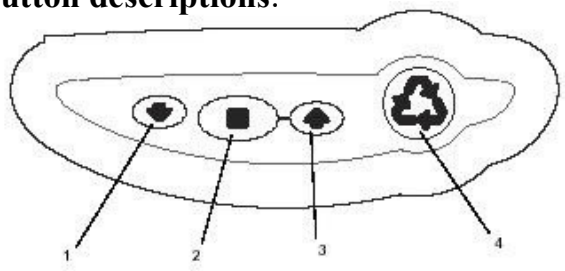
Quick Set Up Guide

The main user guide should only be used for reference purposes, please use this guide for initial programming.

Your softener should already have been set up with the basic settings in the factory.

The only settings you should need to enter are the Time of Day, Day of Week and the Water Hardness where applicable.

Button descriptions.



1. Down arrow. Used to scroll down or increment through a group of choices.
2. Set. Used to accept a setting to store in the memory.
3. Up arrow. Used to scroll up or increment up through a group of choices.
4. Regenerate. Used to command the controller to regenerate.

Before starting this process please ensure that the softener is connected correctly to the water, waste and power supply.

Initial Power Up.

Plug the transformer into the rear of the control panel; this is located to the left top corner of the panel if viewing from the front. Once the power is connected the display may briefly show the valve type (255 or 268). The valve type will be printed on the side of the valve and should also appear on the delivery documentation. On occasions the display may flash between the time and regeneration symbols, press the set button to clear this.

Note. During the set up process the display may revert to normal mode (after 25 seconds).

By repeatedly pressing the up or down arrow button you can scroll to the part of the set up programme you require. If you receive an ERR3 message allow the cam shaft to turn for a few moments and this code should disappear. If the cam does not move check that the Cam Shaft is fitted correctly and that the optical sensor is in position.

Set Time.

Press the set button. The TIME should now be flashing, use the up and down arrows to set the correct time of day (24hrs format). Once the correct time has been selected, press the set button to confirm. The following will then be displayed.

Set Day of the Week.

Press the set button to display the screen shown. The display will flash, use the up and down buttons to advance the arrow to underneath the correct day. Once under the correct day press the set button to confirm. The following will then be displayed.

Salt Setting

The system should have been pre-programmed to the required setting but may need altering or resetting, the default amount is 110 grams/Ltr.
To reset this press the set button to start the display flashing and adjust the setting using the up and down arrows to the correct setting (see 5.2)
On the 740 & 760 control you have options of S, L or H.

Time when system Regenerates.

This normally defaults to 2.00am but can easily be changed to a more suitable time if required by pressing the square set button to start the display flashing, adjusting the time using the up and down arrows then press the square set button to confirm. The following will then be displayed.

Calendar Override Days.

The system should have this pre-programmed to a suggested number of days but this may need altering to suit your needs. This function allows the filter bed to backwash regardless of usage; this is to ensure that the filter bed remains fresh.
Press the set button to start the display flashing then alter the figure using the up and down arrows, then press the set button to confirm the setting.
740 & 742 (Time) Controllers rely totally on this setting.

Hardness Setting (760 & 762 only)

The hardness setting will need to be set on site, the setting is in ppm.
Press the set button to start the display flashing and adjust the hardness value up or down using the up and down arrows, when the correct figure is displayed press the square button to set.

Capacity.

System capacity is displayed in kilograms of hardness removed before regeneration is necessary. This should be factory set but should it require setting you need to press the set button to start the display flashing, then adjust the figure using the up and down arrows and press the set button to confirm the figure. Not adjustable on the 740 or 760 control.

Normal valve operation.

During normal valve operation the 740 & 742 will display the time of day, the 760 will alternate between the time of day and volume of water remaining in cubic meters before regeneration. The 762 will display the current water flow and remaining capacity before regeneration.

Commissioning the Softener.

Open the outlet from the softener, press and hold the regeneration button (4) until the cam starts to rotate, when the cam stops moving open the inlet to the softener slowly until it is about a quarter open. Water will start flowing into the softener and start purging the air from the softener, you will hear the air coming out and eventually water will begin to run steadily from the drain line; you can now fully open the inlet valve to the softener. Advance the regeneration cycle to the (refill) position C8; do this by pressing the set button and up arrow together at the same time and letting go, this advances the cycle to the next position, repeat this until you reach C8. Now allow the valve to continue on it's own to the end of the cycle, this will purge air from the regenerant line and put the correct amount of water into the salt chamber for its first regeneration.

Finally turn on a tap close to the softener and run the water, you may find there is some colouration in the water; this will clear after a short while and is normal. Your softener is now supplying soft water to your home, please bear in mind it may take some time to reach all of the outlets in your home.
It is advised that you instigate a delayed regeneration for the first night (see below)

Initiating a manual regeneration.

The softener can perform two different types of manual regeneration either immediate or delayed.

Immediate Regeneration.

To perform an immediate regeneration you need to press and hold the regeneration button for around five seconds until the cam starts to move and the egg timer shows on the screen.

Delayed Regeneration.

Quickly press and let go of the regeneration button once. The regeneration symbol will appear and flash on the display. A single regeneration will start at the default or pre set regeneration time, if you wish to cancel this delayed regeneration simply quickly press the regeneration button again an the symbol will disappear from the display.

Resetting the Valve Programming.

Occasionally it maybe necessary to reset the valve to factory defaults.

The programmed valve type (softener) can be checked by pressing and holding the SET and DOWN buttons simultaneously for 5 seconds. H0 and a volume is displayed e.g. H0 100, the valve has been set as a softener. If in doubt contact your supplier.

To reset the valve: with H0 displayed, press and hold the SET for 5 seconds

The valve type will now be shown e.g. 255, 268. Choose the correct valve (255 or 268) and press the SET button. Three dashes will now show on screen, this is the volume and should be set accordingly using the up and down arrows set the amount applicable to your system (see following programming details)
It will now be necessary to reset the time, day, regeneration time and override days as above.

Standard

Vessel Size		613	1012	817	919	735	1023	835	935	1035
Type		Micro	Coral	Mistral	Coral	Swan	Mistral	Swan	Swan	Swan
Press ↓ & ■ together H0 appears) then press ■										
Select type of valve		**255**	**255**	**255**	**255**	**255**	**255**	**255**	**255**	**255**
Media Volume to program (litres)		**4**	**10**	**10**	**15**	**18**	**22**	**25**	**30**	**35**
Parameter										
Time of day (HH:MM)	P1	Set on site								
Day of week (DAY)	P2	Set on site								
Time of regeneration (HH:MM)	P3	Set on site / Factory set default 2.00am								
Calendar override days **740/760**	P4	3/14	3/14	3/14	3/14	3/14	3/14	3/14	3/14	3/14
Regen interval if P4 set to 0 **(740 ONLY)**	P5	Set on site if required								
Salt amount (gms)	P6	S	S	S	S	S	S	S	S	S
Capacity (Kg) **740 control** (cannot change)	P7	0.2	0.5	0.5	0.8	0.9	1.1	1.3	1.5	1.8
Capacity (Kg) 760 control	**P7**	**0.2**	**0.5**	**0.5**	**0.7**	**0.9**	**1.1**	**1.3**	**1.5**	**1.8**
Hardness in ppm CaCO3	P8	Set on site 760 only								

Water Save Models

Vessel Size		1012	919	735	835	935	1035	MIstral	Mistral	Swan
Type		Coral	Coral	Swan	Swan	Swan	Swan	Mistral	Mistral	Swan
Press ↓ & ■ together H0 appears) then press ■										
Select type of valve										
Valve / Control		255/762	255/762	255/762	255/762	255/762	255/762	255/762	268/762	268/762
Media volume to program		10	15	20	25	30	35	20	20	30
Level 1 Parameter										
Time of Day (HH:MM)	P1	Set on site (24hr clock)								
Day of Week (DAY)	P2	Set on site								
Time of regeneration (HH:MM)	P3	Factory default 2:00 am								
Calendar Overide Days	P4	14								
Salt setting	P6	150								
Capacity (Kg)	P7	0.5	0.7	0.9	1.2	1.5	1.7	1.1	1.1	1.7
Hardness in ppm CaCO3	P8	Set on site								
Level 3 Parameters (■ & ↑)										
Backwash (Min)	C1	2	2	3	3	4	4	3	3	4
Brine Draw (Min)	C2	Calc at 12	Calc at 13	Calc at 13	Calc at 14	Calc at 17	Calc at 16	Calc at 13	Calc at 13	Calc at 17
Slow Rinse (Min)	C3	40	40	46	43	51	44	46	46	51
Represurise (Min)	C4	3	3	3	3	3	3	3	3	3
Fast Rinse 1 (Min)	C5	2	2	3	3	4	4	3	3	4
Backwash 2 (Min)	C6	1	1	1	1	1	1	1	1	1
Fast Rinse 2 (Min)	C7	1	1	1	1	1	1	1	1	1
Refill (Min)	C8	Calc at 4	Calc at 5	Calc at 7	Calc at 10	Calc at 10	Calc at 12	Calc at 9	Calc at 9	Calc at 10

Standard High Flow

The standard High Flow softener uses a 268 valve with 760 controller and settings are as below.

Vessel Size		1012	919
Type		Coral	Coral
Press ↓ & ■ together H0 appears) then press ■			
Select type of valve		**255**	**255**
Media Volume to program (litres)		**10**	**15**
Parameter			
Time of day (HH:MM)	P1	Set on Site	
Day of week (DAY)	P2	Set on Site	
Time of regeneration (HH:MM)	P3	Set on Site (default 02:00)	
Calendar override days	P4	14	
Salt amount (gms)	P6	S	
Capacity (Kg) 760 control	**P7**	**0.5**	**0.7**
Hardness in ppm CaCO3	P8	Set on Site	

High Flow 762

If you have a High Flow Water save fitted with the 762 controller you will need to use the settings below.

Vessel Size		1012	919	735	835	935	1035	1023
Type		Coral	Coral	Swan	Swan	Swan	Swan	Mistral
Press↓ & ■ together H0 appears, then press ■								
Select type of valve								
Valve / Control		268/762	268/762	268/762	268/762	268/762	268/762	268/762
Media volume to program		10	15	20	25	30	35	20
Level 1 Parameter								
Time of Day (HH:MM)	P1	Set on site (24hr clock)						
Day of Week (DAY)	P2	Set on site						
Time of regeneration (HH:MM)	P3	Factory default 2:00 am						
Calendar Overide Days	P4	14						
Salt setting	P6	150						
Capacity (Kg)	P7	0.5	0.7	0.9	1.2	1.5	1.7	0.9
Hardness in ppm CaCO3	P8	Set on site						
Level 3 Parameters (■ & ↑)								
Backwash (Min)	C1	14	14	14	14	14	14	14
Brine Draw (Min)	C2	Calc at 12	Calc at 13	Calc at 13	Calc at 14	Calc at 17	Calc at 16	Calc at 13
Slow Rinse (Min)	C3	44	49	46	43	51	44	46
Represurise (Min)	C4	3	3	3	3	3	3	3
Fast Rinse 1 (Min)	C5	6	6	6	6	6	6	6
Backwash 2 (Min)	C6	1	1	1	1	1	1	1
Fast Rinse 2 (Min)	C7	1	1	1	1	1	1	1
Refill (Min)	C8	Calc at 4	Calc at 5	Calc at 7	Calc at 9	Calc at 10	Calc at 12	Calc at 7

Coral Eco

If you have a Coral Eco Water Save fitted with the 762 controller you will need to use the settings below.

Vessel Size		919
Type		Coral Eco
Press ↓ & ■ together H0 appears, then ■		
Select type of valve		
Valve / Control		255/762
Media volume to program		15
Level 1 Parameter		
Time of Day (HH:MM)	P1	Set on site (24hr clock)
Day of Week (DAY)	P2	Set on site
Time of regeneration (HH:MM)	P3	Factory default 2:00 am
Calendar Overide Days	P4	14
Salt setting	P6	110
Capacity (Kg)	P7	0.8
Hardness in ppm CaCO3	P8	Set on site
Level 3 Parameters (■ & ↑)		
Backwash (Min)	C1	1
Brine Draw (Min)	C2	Calculated at 9
Slow Rinse (Min)	C3	49
Represurise (Min)	C4	3
Fast Rinse 1 (Min)	C5	1
Backwash 2 (Min)	C6	1
Fast Rinse 2 (Min)	C7	1
Refill (Min)	C8	Calculated at 4

Trouble shooting.

Following is a guide to some of the most common problems that may arise; please consult this section before contacting your supplying dealer as most problems are easily cured using this information.

Troubleshooting		
Proble m	**Possible Cause**	**Solution**
ERR 1 is displayed	Controller power has been	Press the up arrow and the control
	connected and the control is not	should reset.
	sure of the state of operation.	
ERR 2 is displayed	Controller power does not match	Disconnect and reconnect the power
	50 or 60 Hz.	If the problem persists obtain the
		appropriate controller or AC adapter
		for either 50 or 60 Hz power.
ERR 3 is displayed	Controller does not know the	Wait for two minutes for the
	position of the cam shaft. Camshaft	controller to return to home position.
	should be rotating to find home	The hour glass should be flashing
	position.	on the display indicating the motor
		is running.
	Camshaft is not turning during	Check that the motor is connected.
	ERR 3 display.	Verify that the motor wire harness is
		connected to the motor and
		controller module. Verify the optical
		sensor is connected and in place.
		Verify that the motor gear is engaged
		with the cam gear.
		If everything is connected try
		replacing in this order.
		Wire harness.
		Motor.
		Optical sensor.
		Controller.
	If the camshaft is turning for more	Verify that the optical sensor is in
	than five minutes to find home	place and connected to the harness.
	position.	Verify that the camshaft is
		connected correctly.
		Verify no debris is clogging any of
		the cam slots.
		If motor continues to rotate
		indefinately replace the following in
		this order.
		Wire harness.
		Motor.
		Optical sensor.
		Controller.
Four dashes displayed	Power failure occurred.	Press SET to reset time display.

Troubleshooting

Proble m	Possible Cause	Solution
1. Regenerant Tank Overflow	A) Drain line restricted.	Check the drain line is not blocked or kinked.
See also 4	B) Uncontroller refill flow rate.	Remove refill flow control to clean ball and seat.
	C) Air leak in regenerant line.	Check all connections in regenerant line for leaks.
	D) Drain control clogged with resin or other debris.	Clean drain control.
	E) Sinking air check ball (255 only).	Replace air check ball.
	F) Incorrect drain control fitted.	Too small a drain control with a larger injector may reduce the draw rates.
	G) Regenerant valve disc 1 being held open.	Remove obstruction.
	H) Valve disc 2 not closed during regenerant draw causing a refill.	Remove obstruction.
2. Water flow from drain or regenerant line when in service.	A) Flapper valve return spring weak.	Replace valve spring. (contact dealer)
	B) Debris stopping flapper valve from closing.	Remove debris.
3. Hard water after regeneration	A) Incorrect / failed regeneration.	Repeat regeneration after checking settings.
	B) Leaking external bypass valve.	Replace bypass (contact dealer)
	C) O-Ting around riser damaged.	Replace O-Ring (contact dealer)
	D) Capacity too low due to incorrect setting.	Check settings and adjust if required.
4. Will not draw regenerant or intermittent or irregular draw.	A) Low water pressure.	Fit a pump (contact dealer)
	B) Drin line restricted.	Check drain line is not blocked or kinked.
	C) Inlector plugged.	Clean injector and screen.
	D) Injector defective.	Replace injector.
	E) Flapper 2 &/or 3 not fully closed.	Remove debris, check flapper for closing or replace. (contact dealer)
	F) Air check prematurly closed.	Put control into refill C8, replace or repair air check if needed (contact dealer)
5. System will not regenerate automatically.	A) Power not connected.	Connect power.
	B) Defective motor.	Replace motor (contact dealer)
	C) Fouled or defective turbine.	Clean or replace turbine.
	D) Defective turbine cable.	Replace turbine cable.
	E) Turbine cable not positioned correctly.	Push sensor into housing fully until it clicks into place.
6. System regenerated at the wrong time.	A) Settings incorrect.	Correct settings.
7. No conditioned water after regeneration.	A) No salt in tank or level too low.	Add salt to regenerant tank, level should always be above the water level.
	B) Injector plugged.	Clean injector and screen.
	C) Air check closes prematurely.	Check connections for air leaks and check air check ball (255) floats. See also 1 e & 4 f.
8. Backwashes at excessively low or high rate.	A) Incorrect drain controller used.	Replace with correct size.
	B) Debris affecting valve operation.	Remove drain controller and clean volume to correct setting.

Troubleshooting

Proble m	Possible Cause	Solution
9. Valve will not draw brine.	A) Low water pressure.	Fit pump (contact dealer).
	B) Drain line restricted.	Check drain line is not blocked or kinked.
	C) Injector plugged.	Clean injector and screen.
	D) Injector defective.	Replace injector.
	E) Air check closes prematurely.	Put control into brine draw C2 to check. Repair or replace if needed.
10. Uses more or less salt than the setting.	A) Foreign matter in valve causing incorrect flow rates.	Remove brine control and clean our any debris. Put system through a regeneration to flush valve.
11. No water flow display on metered valves.	A) Bypass valve in bypass.	Open bypass.
	B) Meter probe not connected to	Connect correctly.
	C) Restricted turbine rotation due to debris in turbine.	Remove turbine and clean. Turbine should rotate freely, if not replace it.
12. Run out of conditioned water between regenerations.	A) Impropper regeneration.	Repeat regeneration after checking the correct regenerant dosage is set.
	B) Incorrect regeneration setting.	Set correct salt setting.
	C) Incorrect hardness or capacity settings.	Set to correct values.
	D) Water hardness has increased.	Set hardness to correct value.
	E) Restricted turbine rotation.	See 11 c.
	F) No or not enough salt in cabinet.	Salt level should be above water level.